

*function to estimate information-to-go*

Input:  $v_t$ : current active sensor doing path planning  
 $P(t)$ : path planned up to time  $t$   
 $C_o$ : prespecified path length constraint  
 $v_{exit}$ : exit node

output:  $h_{info}$

1. compute constraint on remaining path:  $C = C_o - C_P(t)$
2. If  $C < |v_t - v_{exit}|$   
 $h_{info} = 0$ ;  
 else  
 compute ellipse  $E_t: + |l - v_t| + |l - v_{exit}| = C$   
 compute extreme points  $X_1, X_2, Y_1$ , and  $Y_2$   
 define sample paths:  
 Path1 =  $v_t \rightarrow X_1 \rightarrow v_{exit}$ . Path2 =  $v_t \rightarrow X_2 \rightarrow v_{exit}$ .  
 Path3 =  $v_t \rightarrow Y_1 \rightarrow v_{exit}$ . Path4 =  $v_t \rightarrow Y_2 \rightarrow v_{exit}$ .  
 compute  $h_{path}$  for path  $\in \{\text{Path1}, \text{Path2}, \text{Path3}, \text{Path4}\}$   
 $h_{info} = \max h_{path}$ ;  
 end
3. Return  $h_{info}$

**TABLE 1**

	sqrt(MSE)	BELIEF SIZE	# OF STUCK-RUNS	DIST
CADR	29.88	197.90	80	108.91
M = 2	17.72	152.38	55	78.39
M = 3	7.41	72.27	8	32.94
M = 4	5.40	67.38	0	26.35

**TABLE 2**

	# OF LOST RUNS	STATISTICS OF GOOD RUNS	
		sqrt(MSE)	belief size
CADR	93	23.61	155.92
M = 2	57	14.91	118.72
M = 3	19	11.95	146.01
M = 4	5	11.82	103.05

**TABLE 3**

$C_o$	sqrt(MSE)	belief size	# of hops
shortest path	26.71	883.88	9.91
350	22.54	664.21	10.48
450	14.29	270.72	13.07
550	10.18	175.57	15.70
650	8.49	152.20	18.44

**TABLE 4**